

Work Order ID 141555

Friday, February 05, 2016 8:21:59 AM

646.3810
B 141555
REV. N/C***141555***

Page 1

Item ID: 646.3810

Revision ID:

Item Name: Bracket

Start Date: 2/3/2016 Start Qty: 10.00

Required Date: 2/3/2016 Req'd Qty: 10.00

Reference:

Accept

N900040100Setup Start ***NS1***Stop ***NS2***

Cust Item ID:

Customer:

Approvals:

Process Plan: MLJDate: FEB 08 2016

Tooling:

Date: _____

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
646.3800	N/C

110

110

Mill Conv

Conventional Milling Machine

HAAS CNC VERTICAL MACHINING #1

Memo

1-Machine per DWG
DWG REV: N/C

2- deburr and break all sharp edges

0.00

0.03

10ØJ.L.-L. 15-02-17

120

120

QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

0.00

10ØJ.L.-L. 16-02-17

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Work Order ID 141555

Friday, February 05, 2016 8:21:59 AM

141555

Page 2

Item ID: 646.3810

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Bracket

Start Date: 2/3/2016 Start Qty: 10.00

10

Cust Item ID:

Required Date: 2/3/2016 Req'd Qty: 10.00

10

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC8- Inspect parts - second check	0.00				10	0		DAS 14 9-89
130									
QC	Memo	0.00							
Quality Control									16/02/18
140	Outsource process-Anodize per QSI017 4.1.10.1	0.00				10			DAS 13 9-89
140									
Outsource4	Memo	30.00							
Outsource process - Anodize	Issue P/O to ATG : 31446								
	1- Black Anodize as per Dwg 646.3800								
	2- PRIME AS PER DWG, SEE NOTE #2								
	Certification of Comformity is required								
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.00							
Packaging									

~~10x 2016 03~~

10x 5016 03 8

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Work Order ID 141555

Friday, February 05, 2016 8:21:59 AM

141555

Page 3

Item ID: 646.3810 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Bracket
Start Date: 2/3/2016 Start Qty: 10.00 ***10*** Cust Item ID:
Required Date: 2/3/2016 Req'd Qty: 10.00 ***10*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.00							DAS 38 9-89
Quality Control									MAR 09 2016
180	Identify as per dwg & Stock Location: <u>QC105</u>	0.00							
180									
Packaging	Memo	0.00							DAS 6 8-89
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								MAR 08 2016
190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	0.02							MCS MAR 10 2016
Quality Control									

MAR 09 2016

MCS

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Picklist Print

Friday, February 05, 2016 8:22:02 AM

Work Order ID: 141555

141555

Parent Item: 646.3810

646 3810

Parent Item Name: Bracket

Start Date: 2/3/2016

Required Date: 2/3/2016

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A NEW ISSUE 12-10-22 JLM VERIFIED:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6A1.00X0.75X 0.125X0.060		Purchased		No		110	f	27.3531	0.1375	1.375			

***M7075T6A1 00X0 75X0 125X0**

7075T6 ANGLE 1.0" X .75" X .125" X .060"W

Location

Loc Qty

Loc Code

MAT051

27.3531

123947

27.3531

3.203 J.C.-L 16-02-17

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 03697				SHEET 1 OF 1	
	DWG NO. 646.3800	REV: N/C	PREPARED BY B. PETERS	DATE: 11/14/12	EFFECT ON DWG ☐ INC. ☒ UNINC.	
	DWG TITLE: BRACKETS					
	APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: NEXT ORDER		
TRANSACTION CODES (TC) A-ADD C-CREATE R-REVISE D-DELETE	REASON: ADDED ALTERNATE MATERIAL.				ECR: D-12-006	

IS

1 PRIMARY MATERIAL: 7075-T651 ALUMINUM PER AMS-QQ-A-250/12.
ALTERNATE MATERIAL: 7075-T6511 ALUMINUM PER AMS-QQ-A-200/11.

SHOP COPY

14 ISSUED
16-02-08

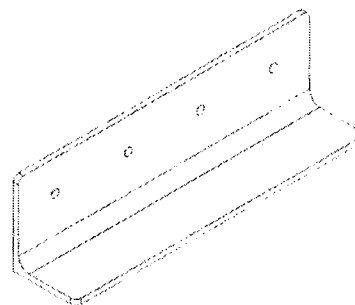
SHEET 1, ZONE A2 IS:

F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL	SPECIFICATION
DOCUMENTS EFFECTED:				☐ RFMS ☐ MDL ☐ INSTALL INSTRU ☐ ICA ☐ BOM	CHANGE CATEGORY ☐ MAJOR ☒ MINOR	DER REVIEW REQUIRED ☐ YES ☒ NO

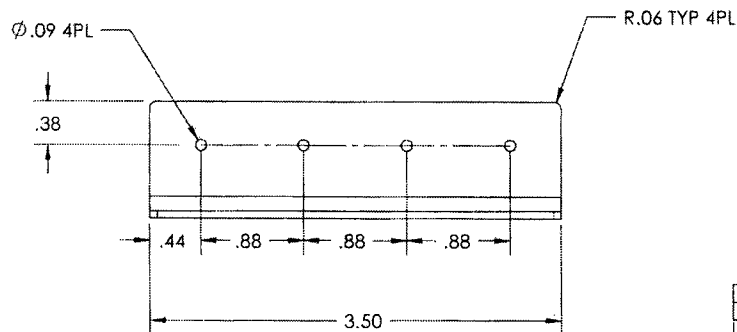
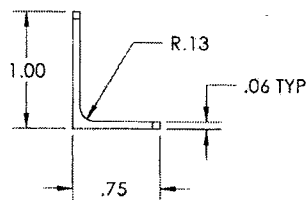
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NOTES:

1. MATERIAL: ALUMINUM 7075-T651 AMS-QQ-A-250/12
2. FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK;
CARDINAL 4860-50 PRETREATMENT PRIMER
PRIME IAW MIL-P-23377J TYPE I CLASS N
3. DEBURR AND BREAK ALL SHARP EDGES
4. IDENTIFY IAW MPP-120



646.3810



UNINCORPORATED ECU (S)

036097

QTY	FIND #	PART #	DESCRIPTION	MATL	SPEC.
		646.3810	WIPER BRACKET	△	△
		646.3813	STRUT BRACKET	△	△
		646.3812	GUSSET BRACKET	△	△
		646.3811	RADIUS BLOCK	△	△
		646.3810	BRACKET	△	△
PARTS LIST					
QTY			PARTS LIST		
NEXT ASSY (S)			APICAL INDUSTRIES		
646.4000			2608 TEMPLE HEIGHTS DR.		
			OCEANSIDE, CA. 92056-3612 (760)724-5300		
			BRACKETS		
			SCALE NONE		
			SHEET 1 OF 5		

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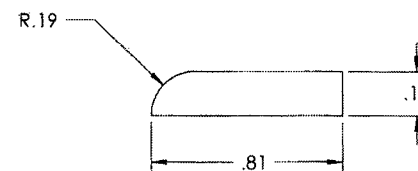
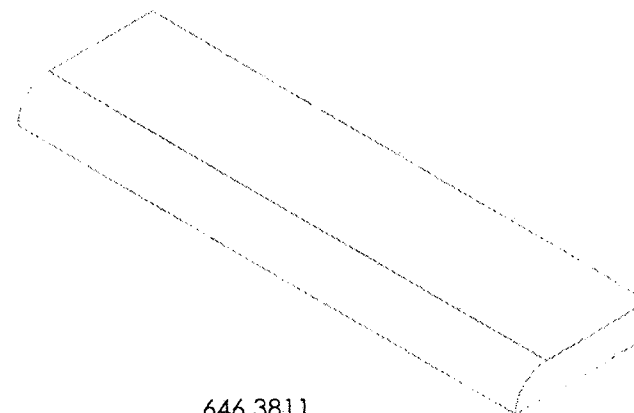
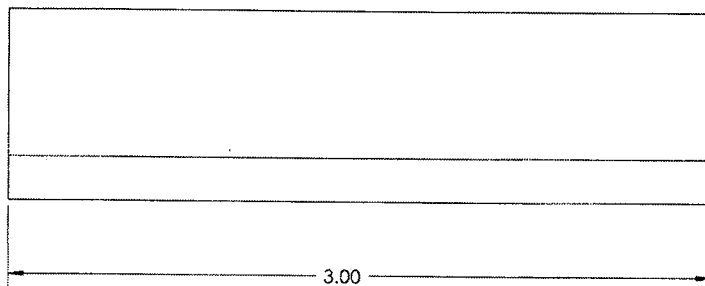
REVISION			
REV	DESCRIPTION	DATE	APPROVED

A

B

C

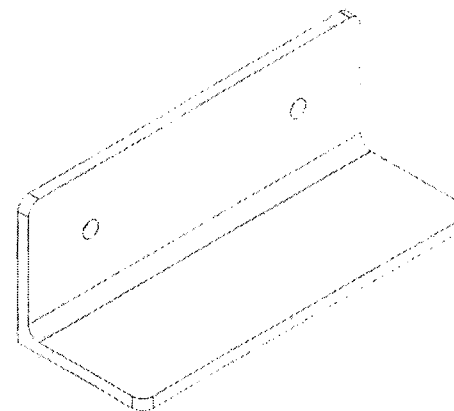
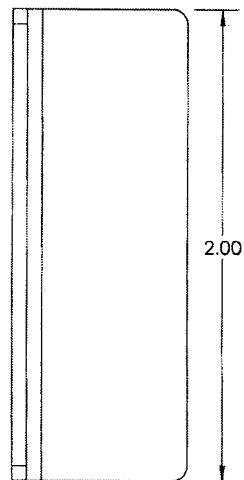
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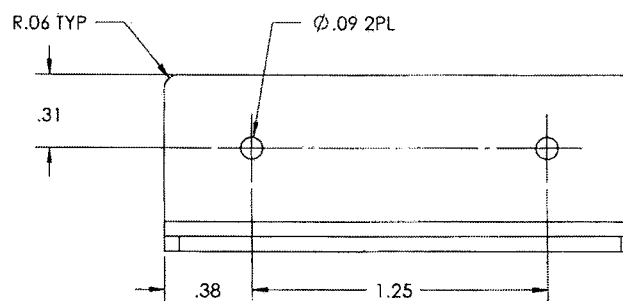
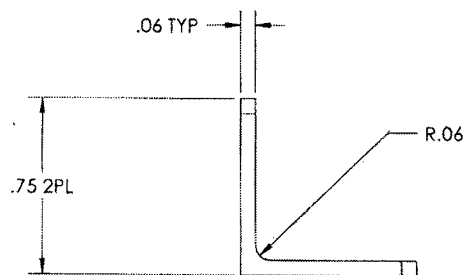
NEXT ASSY [5]		ORIGINAL DATE 05/19/08		APICAL INDUSTRIES 2408 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300			
		DRAWN BY	CHECKED				
		DESIGNED BY					
		DRAWING APPROVAL					
		CONTRACT NO.		BRACKETS SEE CABLE COSI DINC. NO. 646.3800 REV. N/C			
		UNLESS OTHERWISE SPECIFIED					
		DIMENSIONS ARE IN INCHES					
		TOLERANCES ARE:					
		1 PLACE DECIMALS ±.010		SCALE	NONE		
		2 PLACE DECIMALS ±.005		SHEET 2 OF 5			
		ANGLES ±.5°					

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



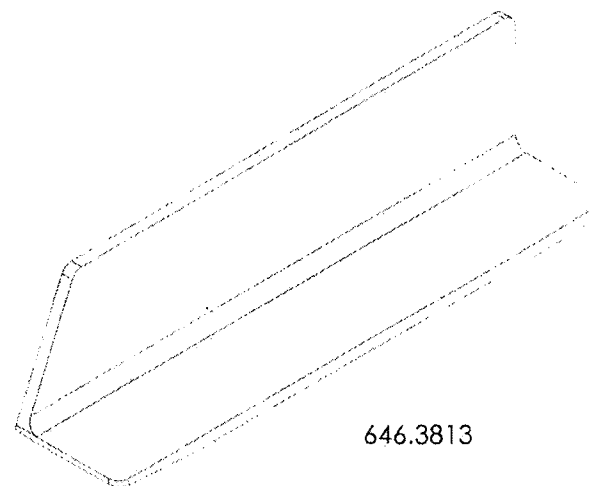
646.3812



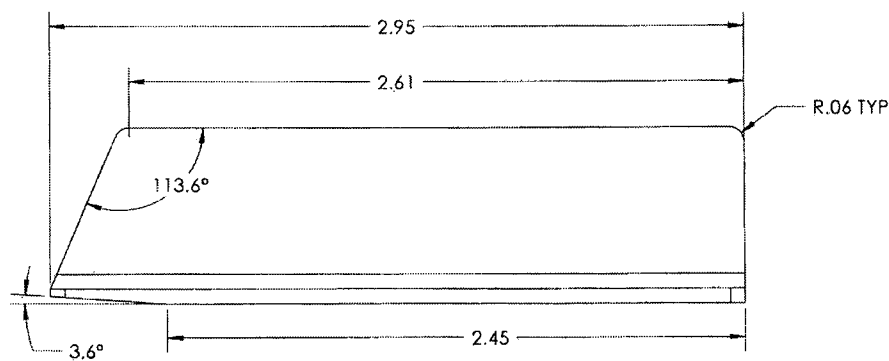
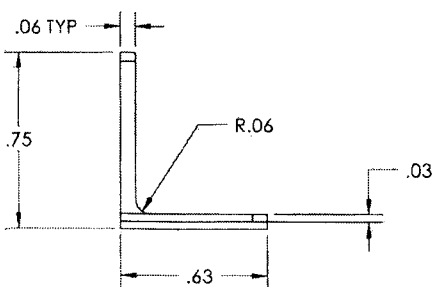
NEXT ASSY (S)	ORIGINAL DATE	06-19-08	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
	DESIGNED BY	CHIEFER		
	DESIGNED BY	J. GARDNER		
	DRAWING APPROVAL			
	CONTRACT NO.		BRACKETS DATE CODE B 07M26 DWG NO. 646.3800 NY N/C SCALE NONE SHEET 3 OF 3	
	UNLESS OTHERWISE SPECIFIED			
	DIMENSIONS ARE IN INCHES			
	TOLERANCES ARE			
	2 PLACE DECIMALS ± .005			
	3 PLACE DECIMALS ± .001			
	ANGLES ± .5°			

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



646.3813



NEXT ASSY (S)	ORIGINAL DATE	08-15-08	APICAL INDUSTRIES 2408 TEMPLE HEIGHTS DR. OCEANSIDE, CA, 92056-3512 (760) 724-5300	
	DRAWN BY	CHECKER		
	1. GARDNER			
	DRAWING APPROVAL			
	CUSTOMER No		BRACKETS	
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.015 3 PLACE DECIMALS ±.005 ANGLES ±.5°			
	DATE	07/14/06	DWG NO.	646.3800
	SCALE	NONE	REV	N/C
			SHEET	4 OF 5

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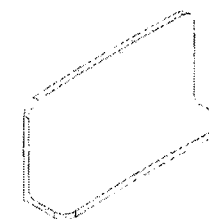
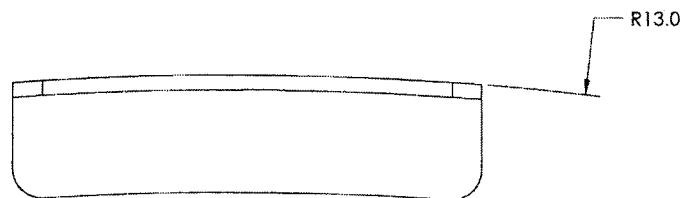
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

A

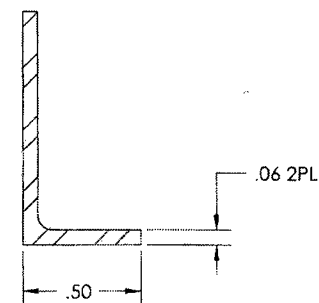
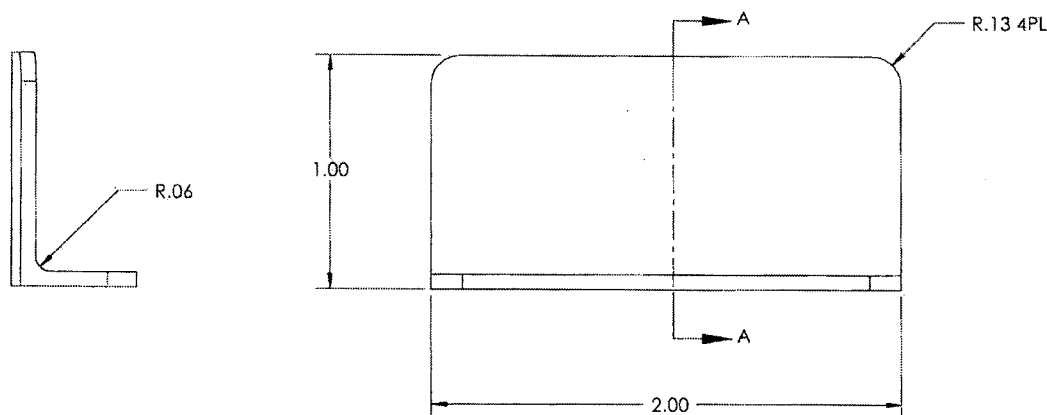
B

C

D



646.3814



SECTION A-A

NEXT ASSY (S)	ORIGINAL DATE	10-19-05	APICAL INDUSTRIES 2605 TEMPLE HEIGHTS DR. OCEANSIDE, CA, 92056-3512 (760) 724-5300	
	INCH/DA (IN)	CHECKER		
	DRAWN BY		BRACKETS	
	LOCATION			
	DRAWING APPROVAL		646.3800	
	CONTRACT NO.			
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .010 3 PLACE DECIMALS ± .005 ANGLES ± .5°	SIZE	CAQF CODE	DWG NO.
		B	071426	646.3800
		SCALE	NONE	REV N/C
				SHEET 5 OF 5